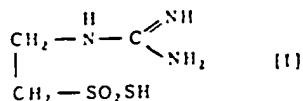


Bv

87-140943/20 B05 SOUG-02.10.85  
 SOUGO YAKKOU KK \*J6 2081-365-A  
 02.10.85-JP-218009 (14.04.87) A61k-31/18 C07c-161  
 Guanidino ethane thiosulphonic acid cholesterol decreasing agent -  
 prepd. by reacting guanidino ethane sulphonic acid with sulphur in  
 presence of base  
 C87-058856

Guanidinoethanethiosulphonic acid of formula (I) is new:



#### USE/ADVANTAGE

(I) is useful as cholesterol decreasing agent.  
 The compound has strong cholesterol decreasing activity  
 and strong HDL-cholesterol increasing activity without  
 toxicity (LD<sub>50</sub> = 3000 mg/Kg in the rat).

#### PREPARATION

Cpd. (I) is prepared by reacting hypotaurocyamine  
 (guanidinoethanesulphonic acid) with sulphur in the presence

B(10-A9B, 12-G1A, 12-H3) 3

B0170

of base.

Caustic alkali such as NaOH, KOH is used as base.  
 Powdered sulphur is pref. used.

Solvent is pref. an alcohol such as MeOH, EtOH or  
 i-PrOH.

#### ACTIVITY

Test results on male rats allowed to eat normal food,  
 cholesterol food, and cholesterol food with (I) (200 mg/Kg.  
 day) for 2 weeks [total] cholesterol in serum, HDL-choles-  
 terol in serum, HDL-cholesterol (mg/dl) are: 109.2, 48.5,  
 521.2, 20.5; 283.9, 28.1.

#### EXAMPLE

Hypotaurocyamine (0.18 mol) was dissolved in 0.2N  
 NaOH, EtOH (1800 ml) and sulphur (6.3g) were added.  
 The mixture was stirred under reflux until the sulphur  
 completely disappeared and was allowed to stand over-  
 night. Crude crystals were filtered and washed with CS<sub>2</sub>  
 (twice) and EtOH. The crystals were dissolved in hot-  
 water and recrystallized by adding EtOH (2700ml) and  
 cooling. Filtration and washing with ether afforded 26.4 g  
 (80.1%) of (I), mp 206-210°C. (4ppw67LDDwgNo0/0).

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87-140944/20 B03 TOST-02.10.85  
 TOHYOH STAUFER CHEM \*J6 2081-368-A  
 02.10.85-JP-219681 (14.04.87) C07d-205/08  
 Highly stereoselective synthesis of beta-lactam deriv. - by treating  
 lithium enolate of organic ester with organic imine cpd. in polar  
 solvent  
 C87-058857

β-Lactam derivs. are synthesized highly selectively by treat-  
 ing lithium enolate of organic ester with organic imine cpd.  
 in polar solvent.

The organic imine cpd. may be an imine coordinated  
 with trialkylaluminum. When the cpd. is used as imine, cis  
 prod. may be synthesized with 100% stereoselectivity.

#### USE/ADVANTAGE

Lactams are formed with high stereoselectivity. Prods.  
 are useful as pharmaceuticals.

#### EXAMPLE

n-BuLi (15% hexane soln.) (12 m mols.) was added to a  
 soln. of diisopropylamine (12 m mols.) in n-hexane (7 ml)  
 with ice-cooling under N<sub>2</sub>, and resultant mixt. was stirred.  
 n-Hexane was distilled off under reduced press., THF (5 ml)  
 was added to the residue, and the mixt. was cooled to -78°C.

B(7-D1)

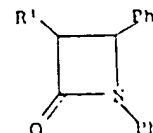
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(CH<sub>3</sub>)<sub>2</sub>CHCH<sub>2</sub>COOC<sub>2</sub>H<sub>5</sub> or CH<sub>3</sub>CH<sub>2</sub>COOC<sub>2</sub>H<sub>5</sub> (10 m mols) was  
 added within three minutes to the above mixt., and a soln. of  
 C<sub>6</sub>H<sub>5</sub>CH=NC<sub>6</sub>H<sub>5</sub> (10 m mols) in THF (5 ml) or a soln. of the  
 imine (10 m mols) and AlR<sub>3</sub> (see below), (10 mmols) in THF  
 (5 m mols) was added.

The low temp. cooling bath was removed and temp. of  
 reaction mixt. was elevated slowly to room temp. over ten  
 hours. The mixt. was then hydrolysed with 1N HCl aq. soln.  
 and prod. was extracted with benzene to give β-lactam.

Yield of the β-lactam and results of cis : trans ratio are  
 as follows:



(II)

(n) R<sup>1</sup> = i-Pr:

J62081368-A

AlR <sub>3</sub>	Yield (%)	Cis : trans ratio
None	87	0 : 100
Al(CH <sub>3</sub> ) <sub>3</sub>	73	100 : 0
Al(C <sub>2</sub> H <sub>5</sub> ) <sub>3</sub>	75	100 : 0
Al-i-Bu <sub>3</sub>	40	100 : 0

(b) R = Cl<sub>2</sub>:

AlR <sub>3</sub>	Yield (%)	Cis : trans ratio
None	92	0 : 100
Al(CH <sub>3</sub> ) <sub>3</sub>	85	100 : 0
Al(C <sub>2</sub> H <sub>5</sub> ) <sub>3</sub>	83	100 : 0
Al-i-Bu <sub>3</sub>	52	100 : 0

(5ppw69EDDwgNo0/0).

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